AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1   1. (Currently amended) <u>A computing environment</u> ~~An electromagnetic~~
2   ~~waveform~~ comprising a computer program, the computer program for solving
3   constraints during functional verification of a representation of an electronic
4   design of an integrated circuit (IC), the computer program comprising the
5   following steps when executed by a data processing system:
6   selecting a first set of block-related constraints, from a first set of
7   constraints, according to a first block;
8   identifying a first set of non-block-related constraints, from the first set of
9   constraints, not selected for the first set of block-related constraints;
10   conjoining the first set of block-related constraints to produce a first
11   solution generator;
12   existentially quantifying the first block from the first solution generator to
13   produce a first new constraint;
14   ~~unioning~~ <u>computing a union of</u> the first new constraint and the first set of
15   non-block-related constraints to produce a second set of constraints;
16   selecting a second set of block-related constraints, from the second set of
17   constraints, according to a second block;
18   conjoining the second set of block-related constraints to produce a second
19   solution generator;
20   solving the second solution generator; and

21   solving the first solution generator using a second result of solving the

22   second solution generator.

1   2. (Currently amended) A method for solving constraints, comprising:

2   selecting a first set of block-related constraints, from a first set of

3   constraints, according to a first block;

4   conjoining the first set of block-related constraints to produce a first

5   solution generator;

6   existentially quantifying the first block from the first solution generator to

7   produce a first new constraint;

8   identifying a first set of non-block-related constraints, from the first set of

9   constraints, not selected for the first set of block-related constraints;

10   unioning computing a union of the first new constraint and the first set of

11   non-block-related constraints to produce a second set of constraints;

12   selecting a second set of block-related constraints, from the second set of

13   constraints, according to a second block;

14   conjoining the second set of block-related constraints to produce a second

15   solution generator;

16   solving the second solution generator; and

17   solving the first solution generator using a second result of solving the

18   second solution generator.

1   3. (Original) The method of claim 2, further comprising:

2   defining a partition, including the first block, prior to selecting a first set of

3   block-related constraints.

1   4. (Original) The method of claim 2, further comprising:

2   defining a partition, including the second block, dynamically by applying a

3   metric to the second set of constraints.

1   5. (Original) The method of claim 2, further comprising:

2   introducing at least one auxiliary variable, prior to the step of selecting a

3   first set of block-related constraints, in order to reduce a complexity of at least one

4   constraint contained in the first set of constraints.

1   6. (Original) The method of claim 2, wherein the first block does not

2   contain state variables.

1   7. (Currently amended) The method of claim 2, further comprising:

2   successively repeating the steps of existentially quantifying, identifying

3   and <u>computing a union</u> ~~unioning~~ on a current set of constraints to produce a next

4   set of constraints, and selecting and conjoining on the next set of constraints

5   according to a next block, until there is no next block.

1   8. (Original) The method of claim 2, further comprising:

2   existentially quantifying the second block from the second solution

3   generator to produce a second new constraint; and

4   successively repeating the steps of identifying and unioning on a current

5   set of constraints to produce a next set of constraints, and selecting, conjoining

6   and existentially quantifying on the next set of constraints according to a next

7   block, until there is no next block.

1   9. (Currently amended) A computer program product comprising:

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2   a computer usable medium having computer readable code embodied

3   therein for determining a solution to a set of constraints, the computer program

4   product including:

5   computer readable program code devices configured to cause a computer

6   to effect selecting a first set of block-related constraints, from a first set of

7   constraints, according to a first block;

8   computer readable program code devices configured to cause a computer

9   to effect conjoining the first set of block-related constraints to produce a first

10   solution generator;

11   computer readable program code devices configured to cause a computer

12   to effect existentially quantifying the first block from the first solution generator

13   to produce a first new constraint;

14   computer readable program code devices configured to cause a computer

15   to effect identifying a first set of non-block-related constraints, from the first set

16   of constraints, not selected for the first set of block-related constraints;

17   computer readable program code devices configured to cause a computer

18   to effect computing a union of~~unioning~~ the first new constraint and the first set of

19   non-block-related constraints to produce a second set of constraints;

20   computer readable program code devices configured to cause a computer

21   to effect selecting a second set of block-related constraints, from the second set of

22   constraints, according to a second block;

23   computer readable program code devices configured to cause a computer

24   to effect conjoining the second set of block-related constraints to produce a

25   second solution generator;

26   computer readable program code devices configured to cause a computer

27   to effect solving the second solution generator; and

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28   computer readable program code devices configured to cause a computer

29   to effect solving the first solution generator using a second result of solving the

30   second solution generator.

1   10. (Currently amended) <u>A computing environment</u> An electromagnetic

2   waveform comprising a computer program, the computer program for determining

3   a solution to a set of constraints, the computer program comprising the following

4   steps when executed by a data processing system:

5   selecting a first set of block-related constraints, from a first set of

6   constraints, according to a first block;

7   conjoining the first set of block-related constraints to produce a first

8   solution generator;

9   existentially quantifying the first block from the first solution generator to

10   produce a first new constraint;

11   identifying a first set of non-block-related constraints, from the first set of

12   constraints, not selected for the first set of block-related constraints;

13   <u>computing a union of</u> unioning the first new constraint and the first set of

14   non-block-related constraints to produce a second set of constraints;

15   selecting a second set of block-related constraints, from the second set of

16   constraints, according to a second block;

17   conjoining the second set of block-related constraints to produce a second

18   solution generator;

19   solving the second solution generator; and

20   solving the first solution generator using a second result of solving the

21   second solution generator.

1   11-17 (Canceled)